AUGUST MONTHLY TEST 2024

12th Standard

Maths

Exam Time : 00:45 Hrs Total Marks : 25

PART - A 3 x 2 = 6

*Answer any **THREE** questions*

1) Find the period and amplitude of y = sin 7x

2) Find $\cos^{-1}\left(-\frac{1}{\sqrt{2}}\right)$

3) If y = 4x + c is a tangent to the circle $x^2 + y^2 = 9$, find c

4) Identify the type of the conic for the following equations :
$11x^2-25y^2-44x+50y-256 = 0$

PART - B 3 x 3 = 9

*Answer any **THREE** questions*

5) Find the domain of $\cos^{-1}\left(\frac{2+sinx}{3}\right)$

6) Find the vertex, focus, equation of directrix and length of the latus rectum of the following:
$y^2 = -8x$

7) Prove that
$tan^{-1}\left(\frac{2}{11}\right) + tan^{-1}\left(\frac{7}{24}\right) = tan^{-1}\left(\frac{1}{2}\right)$

8) Find the equation of the hyperbola with vertices (0, ±4) and foci(0, ±6).

PART - C 2 x 5 = 10

Answer any **TWO** Questions

9) Prove that $\tan^{-1} x + \tan^{-1} y + \tan^{-1} z = \tan^{-1}\left[\frac{x+y+z-xyz}{1-xy-yz-zx}\right]$

10) Find the value of $cot^{-1}(1) + sin^{-1}\left(-\frac{\sqrt{3}}{2}\right) - sec^{-1}(-\sqrt{2})$

11) Find the equation of the circle passing through the points (1, 1), (2, -1) and (3, 2) .

12) Find the foci, vertices and length of major and minor axis of the conic $4x^2 + 36y^2 + 40x - 288y + 532 = 0$

ALL THE BEST

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